



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,919	08/02/2006	Friedrich Severin Buchler	25045-16	3609
7590 John B Hardaway III Nexsen Pruet P O Box 10107 Greenville, SC 29603				
			EXAMINER	
			FREEMAN, JOHN D	
			ART UNIT	PAPER NUMBER
			1794	
			MAIL DATE	DELIVERY MODE
			10/15/2008 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/587,919

**Applicant(s)**

BUEHLER, FRIEDRICH SEVERIN

**Examiner**

John Freeman

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27-52 is/are pending in the application.
- 4a) Of the above claim(s) 47-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/55/08)  
Paper No(s)/Mail Date 8/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species I, relating to formula (0), in the reply filed on 20 June 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 47-52 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 20 June 2008.

### ***Specification***

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: the paragraph which mirrors claim 1 (p9 lines 12-23).

### ***Claim Objections***

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 29 recites "said tetracosane used is a 2,6,10,15,19,23-hexamethylene tetracosane and/or isomer thereof." The specification, however, only provides support for the use of "2,6,10,15,19,23-hexamethyltetracosane" (p14, lines 7-9; p44, line 26). The specification makes not mention of the use of isomers of hexamethyltetracosane. As noted in paragraph 22 below, the examiner interprets claim 29 to be directed toward 2,6,10,15,19,23-*hexamethyl* tetracosane.
5. Claim 31-32 and 43 is objected to because of the following informalities:
  - Claims 31 and 32 each recite "nom" in the third to last line of each; it should read "from".
  - Claim 43 contains a period in the middle of the claim in line 9 of the claim.Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 27-31, and 33-39 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a plastic molding compound comprising a polyamide defined by formula (0), formula (A), or formulas (I) and (II), does not reasonably provide enablement for a plastic molding compound comprising any plastic (claim 27), or the list of general polymers provided (claim 30). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

8. Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]" *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. App. Inter. 1990). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all compounds within the scope of claims 27-31, and 33-39 can be used as claimed and whether claims 27-31, and 33-39 meet the test is stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400, 1404 (Fed.Cir. 1988). Upon applying this test to claims 27-31, and 33-39, it is believed that undue experimentation **would** be required because:

(a) *The quantity of experimentation necessary is great* since claims 27-31, and 33-39 read on a plastic molding compound comprising any plastic (claim 27), or the list of general polymers provided (claim 30) while the specification discloses the preferred use of specific polyamides according to formulas (0), (A), and (I) and (II) (p9, line 25 through p13, line 25).

(b) There is **no direction or guidance presented** for a plastic molding compound comprising any plastic (claim 27), or the list of general polymers provided (claim 30).

(c) There is an **absence of working examples** concerning a plastic molding compound comprising any plastic (claim 27), or the list of general polymers provided (claim 30): all inventive examples concern

Art Unit: 1794

polyamides according to formulas (0), (A), and (I) and (II), and all comparative examples concern polyamides.

In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claims 27-31, and 33-39.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 27-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Substantive errors are pointed out below.

Claim 27

12. Claim 27 recites "material composites of a moulded article of at least one...plastic moulding compound which moulded article is bonded to at least one...surface layer, decorative films, functional films or coats or rubbers or other plastics". It is unclear what exactly is being claimed: is the claim directed toward a material composite, or a molded article? Further, it is unclear what the material composite and molded article each comprise. The examiner considers the molded article to comprise the plastic molding compound, and the material composite to comprise the molded article bonded to another layer. Furthermore, the claim recites the plural "material composites". It is unclear whether Applicant claims a single composite or multiple composites.

13. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow

Art Unit: 1794

language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 27 recites the broad recitation "an amount of 0.01 to 5.0% by weight [of lubricant]", and the claim also recites "preferably 0.01 to 2.0% by weight" which is the narrower statement of the range/limitation.

14. Claim 27 recites "characterised in that said plastics moulding compound used for the manufacture of said moulded article, said surface layer or said other plastics contains..." It is unclear whether the "surface layer" and "other plastics" are required to comprise the same plastic molding compound required in the molded article. Furthermore, it is unclear how "other plastics" can include the plastic molding compound; "other" implies the plastic compositions would be different. It is also unclear whether each layer comprising the plastic molding compound, e.g. the molded article or surface layer, must contain a lubricant.

15. Claim 27 recites the limitation "the moulding compound" in line 11. There is insufficient antecedent basis for this limitation in the claim.

16. Claim 27 recites the "[plastic molding compound] contains...at least one lubricant selected from the group consisting of sorbitan esters...and from the group consisting of non-polar paraffin oils and tetracosanes..." It is unclear why there are two groups defined, and how they relate to the lubricant used in the plastic molding compound.

17. Claim 27 recites "glycol" as a lubricant. It is unclear whether applicant intends for this to be interpreted as ethylene glycol, or the general class of glycols.

18. Claim 27 recites "non-polar paraffin oils". It is unclear why Applicant modifies paraffin oils with the phrase "non-polar" when all paraffin oils are inherently non-polar.

19. The term "permanent" in claim 27 is a relative term which renders the claim indefinite. The term "permanent" is not defined by the claim, the specification does not provide a standard for ascertaining the

Art Unit: 1794

requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what is meant by "permanent adhesion" as defined by the claim.

20. Claim 27 recites the limitation "said other plastics layers" in lines 18-19 of the claim. There is insufficient antecedent basis for this limitation in the claim.

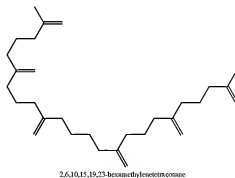
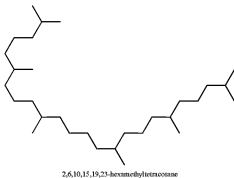
21. Claim 27 recites "said other plastics layers...or other plastics" in lines 18-20 of the claim. It is unclear why "other plastics" is duplicated.

Claim 28

22. The term "low-molecular" in claim 28 is a relative term which renders the claim indefinite. The term "low-molecular" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The examiner notes the claim should read "low-molecular weight paraffins". Further, the specification provides not guidance as to what constitutes a "low-molecular weight paraffin".

Claim 29

23. Claim 29 recites "said tetracosane used is a 2,6,10,15,19,23-hexamethylene tetracosane and/or isomer thereof." The specification, however, only provides support for the use of "2,6,10,15,19,23-hexamethyltetracosane" (p14, lines 7-9; p44, line 26). The examiner interprets the claim to read "said tetracosane used is a 2,6,10,15,19,23-hexamethyl tetracosane".



Claim 30

24. Claim 30 recites the limitation "said moulding compound" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 1794

25. Claim 30 recites "and copolymers thereof" in line 8 of the claim. It is unclear to which polymers this refers.
26. Claim 30 recites "poly(xymethylene)" in line 12. The examiner interprets this to be "poly(oxyethylene)".
27. Claim 30 recites "or mixture thereof", but it is unclear whether that refers to a mixture of any of the preceding polymers, or only specific polymers.

Claim 31

28. Claim 31 appears to define a Markush group having only one element: "a process selected from the group consisting of compounding as a master batch".
29. Applicant's claim recites that the "at least one lubricant" is (i) added during the polymerization, (ii) is included by a process, (iii) is applied to the granulate, and (iv) is used for the dispersion of colored pigments. It is unclear how all four processes can occur in the process of making the composite.

Claim 32:

30. Claim 32 recites "[said plastic molding compounds] are polyamide molding compounds selected from the group consisting of lactams, ω-amino acids and/or dicarboxylic acids..." The elements listed, e.g. lactams, are not polyamide compounds, but rather polyamide *precursors*.
31. Claim 32 recites "[said plastic molding compounds] are polyamide molding compounds selected from the group consisting of lactams, ω-amino acids and/or dicarboxylic acids..." The use of "and/or" within the body of a Markush group renders the group improper: only "and" should be used with a Markush group.
32. Claim 32 recites "including suitable amounts of diamines". The term "suitable" renders the claim indefinite. It is unclear what is meant by "suitable" or what amounts this would encompass.
33. Claim 32 recites "the respective monomers being derived [from] the group of aliphatics, cycloaliphatics or aromatics which may comprise other substituents or branches." It is unclear which compounds may comprise "other substituents or branches". Further, it is unclear what is meant by "other substituents" when no substituents are mentioned in the claim to warrant the use of "other".



Art Unit: 1794

Claim 33

34. Claim 33 recites "said moulded articles are manufactured..." Independent claim 27 recites only a single molded article.
35. Claim 33 disclose a Markush group wherein "or" appears, instead of only "and".
36. Claim 33 recites "a special injection moulding process". It is unclear to what this refers.

Claim 34

37. Claim 34 recites the "material composites...further comprising in-mould labeling...composite injection moulding, laminating, vapour coating, printing adhesive bonding, dyeing, or coating, and sealing and are permanently bonded to other components." It is unclear what is bonded to "other components". It is also unclear whether "other components" refers to layers introduced by, e.g. in-mold labeling of the material composite. Further, it is not clear how the composite further comprises a process, i.e. laminating, or sealing. For the purposes of examination, the examiner interprets this claim to apply a third layer to the composite article of claim 27.

Claim 35:

38. Claim 35 recites "said composites are coated, hardcoated, or dyeable hard coated". It is unclear what the terms "hardcoated" and "dyeable hard coated" mean.
39. Claim 35 recites "said composites are coated...and are attached...onto the moulded article...and subsequently cured." It is unclear how the material composites, which contain the molded article, are coated with a layer, and then attached to the molded article. For the purposes of examination, the examiner interprets this claim to apply a third layer to the composite article of claim 27.
40. Regarding claim 35, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 36

41. Claim 36 recites "wherein vapour coating processes (sputtering)". The parentheses render the claim indefinite because it is unclear whether the limitation, i.e. sputtering, are part of the claimed invention.
42. It is unclear what is meant by the term "shade" in claim 36.

Claim 37

43. Regarding claim 37, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

44. Claim 37 recites the composite can be "used for...all kinds of apparatuses...multi-layer films, compound containers, and all kinds of transparent composites." It is not clear what apparatuses or compound containers Applicant attempts to claim. Further, it is unclear why Applicant claims "multi-layer films...and all kinds of transparent composites" since claim 27 recites films and composites.

Claim 38

45. Claim 38 recites the limitation "said coats" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 39

46. Regarding claim 39, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

47. For the purposes of examination, the examiner interprets claim 39 to apply a third layer to the composite article of claim 27.

Claim 40

48. The use of nuclei and variations thereof within claim 40 render the claim indefinite. It is not clear for example what a cycloaliphatic nucleus means.

Claim 42

49. Regarding claim 42, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

50. Claim 42 recites "said polyamide moulding compounds consist of one or more components of said polyamides of formula (0) and one or more components selected from the group consisting of impact strength modifiers...and from the group of foreign polymers or from the group of thermotropic and thermochromic additives...and other processing agents or from the group of reinforcing materials..." It is unclear how all of these groups relate to each other: do they all fall under the main Markush group, or are some alternatives to the Markush group?

Art Unit: 1794

51. Claim 42 recites "foreign polymers" and "processing agents". It is unclear what is meant by either phrase or what they encompass.

52. Claim 42 recites "or independent of the wavelength of the radiated light". It is not clear how this relates to thermotropic or thermochromic additives, which change phase or color, respectively, according to temperature.

Claim 43

53. Part B of claim 43 recites "which are particularly selected from the group consisting of..." The phrase "which are particularly selected from" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

54. Claim 43 recites the limitation "the other long-chain aliphatic diamines" in line 23 of the claim. There is insufficient antecedent basis for this limitation in the claim.

55. The claim recites "wherein up to 100 mole-% of the other long-chain aliphatic diamines and up to 100 mole-% of the other long-chain aliphatic dicarboxylic acids may optionally be added as up to 20 mole-% of  $\omega$ -amino acids having 6 to 12 C-atoms or lactams having 6 to 12 C-atoms". It is unclear how up to 100% of the diamines and 100% of the dicarboxylic acid can be replaced by only 20% of amino acids or lactams.

***Claim Rejections - 35 USC § 103***

56. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

57. Claims 27, 30-35, and 37-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhler (US 2003/0235666) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358).

Art Unit: 1794

58. Buhler discloses polyamide molding compounds useful for molded articles [0012]. The polyamide molding compounds comprise the same compounds as disclosed in the present claims 43-46 [0019-0021]. The molded articles can be used as lenses, i.e. they are clear [0013].

59. The molded articles may further comprise additional layers [0022, 53, 58], such as polarizing sheets. Other layers can be vapor coated to the article [0022].

60. The molding materials comprise lubricants such as paraffin oils or stearates [0043-44].

61. Buhler is silent with regard to the amount of lubricant used.

62. Lubricants were well-known additives in the art, however, and the claimed range falls within standard ranges. For example, Plachetta et al. discloses thermoplastic polyamide molding materials having lubricants of not more than 2% by weight (col 7 ln 15-20); Stendel et al. disclose a molded article of polyamide having up to 20% by weight of lubricants (col 2 ln 30-42); and Epstein discloses molded articles of polyamide having up to 1.0% by weight of lubricants (col 8 ln 67-68).

63. It has long been an axiom of United States patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."); "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)).

64. At the time of the invention, it would have been obvious to one of ordinary skill in the art to add lubricants to the molding compounds as taught by Buhler to improve the processing properties of the compounds, and further it would have been obvious to arrive at the presently claimed loading range through routine optimization.

Art Unit: 1794

65. Regarding claim 31:

66. The lubricants are added to the plastic pellets (granules) of the molding compounds [0043].

67. Regarding claim 33:

68. The molded article can be made by methods such as injection molding methods [0048].

69. Regarding claim 35:

70. The molded articles can be dyeable hard coated with lacquers applied to the article via a solution, and subsequently cured [0056].

71. Regarding claim 42:

72. The molded article contain impact modifiers, and reinforcing materials [0044].

73. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhler (US 2003/0235666) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358) as applied to claims 27, 30-35, and 37-46 above, and further in view of Ingersoll (US 3,649,541) or Kato (US 4,908,726).

74. Buhler in view of Plachetta et al. or Stendel et al. or Epstein teaches a composite material having lubricant therein as discussed previously. Buhler teaches the molding materials comprise lubricants such as paraffin oils, i.e. low-molecular weight paraffins [0043-44].

75. The references are silent with regard to the use of a tetracosane lubricant.

76. 2,6,10,15,19,23-hexamethyl tetracosane (also called squalane) was a well-known lubricant at the time of the invention, however. For example, Ingersoll teaches the use of squalane in a resin (col 10 In 62-64); and Kato teaches the addition of liquid paraffins and squalane to a composite plastic in amounts from 0.5-2.0% by weight (col 2 In 35-44).

77. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use squalane and paraffin oils as a lubricant in the composite article given it was a well-known lubricant with understood properties to improve the processing properties of the compounds of Buhler.

Art Unit: 1794

78. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buhler (US 2003/0235666) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358) as applied to claims 27, 30-35, and 37-46 above, and further in view of Kaganowicz (US 4,328,646) or Reed et al. (US 4,927,704) or Hu et al. (US 5,298,587).

79. Buhler in view of Plachetta et al. or Stendel et al. or Epstein teaches a composite material having lubricant therein as discussed previously. Buhler teaches other layers can be vapor coated to the article [0022].

80. The references are silent with regard to a silicon hard coat.

81. Silicon hard coats were well-known in the art for their abrasion resistance properties. For example, Kaganowicz discloses a method of applying inorganic coatings of silicon oxide to plastic substrates via vapor deposition (col 2 In 30-45); Reed et al. disclose abrasion-resistant plastic articles vapor coated with silicon materials (claim 1); and Hu et al. disclose a method of forming a protective abrasion resistant coating on a substrate via PECVD (col 1 In 35-37).

82. At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply a vapor-deposited silicon hard coat to the composite material of Buhler to improve the abrasion resistance of the material.

### ***Conclusion***

83. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vila '090 discloses the production of squalane.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Freeman  
Examiner  
Art Unit 1794

/John Freeman/  
Examiner, Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794